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EXAMINER	
ELALLAM, AHMED	
ART UNIT	**PAPER NUMBER**
2662	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/748,419	HOCH ET AL.	
	Examiner	Art Unit	
	AHMED ELALLAM	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-22 and 24* is/are rejected.

7)☒ Claim(s) *11,23 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 July 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: In figure 1, numeral character "20" and "25" indicated on page 4, line 6, and 29 respectively are not shown. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Similarly, in figure 4, the numbering character 68 designating "Virtual Output Queue" is missing, and in figure 9 and 10, the numeral characters 200 and 210 are respectively missing, see page 15, line 11.

2. The drawings are objected to because in figure 4, the descriptive label "IGRESS RECEIVE LOGIC" 50 has a typo error, the term "IGRESS" should be changed to INGRESS. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required

in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

On page 4, line 6, the "second shelf" is referred to by the numeral character 20, while on line 26 it is referred to by the numeral character 13. Reference numbering is not consistent with the regard to "second shelf".

On page 6, line 10, the numeral character 12 refers to service cards, while in the drawings it refers to service shelf.

On page 7, line 10, the numeral character 54 refers to "Ingress Transmit Logic", while on the drawing of figure 4, it refers to "Egress Transmit Logic".

On page 11, line 8, the numeral character 116 refers to a "scheduler", while on the drawings it refers to "Back Pressure Table".

Appropriate correction is required.

Applicants are respectfully requested to review the content of the specification and the drawings for other errors that may exist similar to the ones mentioned above.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5, 17 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention:

Regarding claims 5 and 17, the specification doesn't adequately describe the feature of "altering the filter table is accomplished via a service shelf processor" as in claim 5 and "altering the filter table is accomplished via a local service shelf processor" as in claim 17. More specifically, the specification does not disclose a service shelf processor that alters the filter table. What the specification states is that the ARB

(arbiter) generate an interrupt to a local processor and not a processor that alter the filter table. See specification paragraph [0058].

Regarding claim 24, the "said test cells" and "said interface" lack antecedent basis.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 10, 19, 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 7 and 19, it is not clear what is meant by "redundant switching cores need not operate in lock step", and the specification does not describe the lock step.

Claims 10 and 22 depend from respective claims 7 and 19, thus they are subject to the same rejection.

Claim Objections

6. Claims 1, 10 and 12 are objected to because of the following informalities:

With regard to claim 1, the "said flow controller" lack clear antecedent basis. It is not clear if the claimed "said flow controllers" refers to ingress flow controllers or egress flow controllers or both.

In claim 10, "said flow controllers include a back pressure mechanism" lack clear antecedent basis. It is not clear if reference is made to ingress flow controllers or egress flow controllers or both.

In claim 12, "said interface" lacks antecedent basis.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-9, 12-21, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones et al, (US 6,067,286), hereinafter referred to as Jones.

Regarding claim 1 with reference to figure 1 and 2, Jones discloses a method of operating a multi-service packet based switch (figure 1) including switch fabric 14a and 14b (claimed redundant switching cores), the method comprising :

A plurality of slot controllers, each slot controller having cell processors (20a, 20b, figure 2) and arbitration logic 25 for controlling traffic flows output from the switch fabrics and input to the switch fabrics, see column 4, lines 27-41; each slot controller determine the availability of data paths to all other slot controllers through both switch fabrics and for selecting a data path through one or other of the switch fabrics (14a and 14b), see column 1, lines 61-67, and column 2, lines 1-7. (Examiner interpreted the slot controller having the control over traffic flow inputs and outputs via the switch fabrics as being the claimed providing a plurality of ingress and egress communications traffic

flow controllers, each of said flow controllers directing one or more threads of said communications traffic over one or another of said redundant switching cores),

Each slot controller having means for sending to each slot controller "health check" data cell and means for receiving health data cells from other slot controllers and means for monitoring the return of health check cells, see column 2, lines 19-29, (monitoring communications flow paths traversing said ingress flow controllers, one of said redundant switching cores and said egress flow controllers),

identifying the availability of individual data paths through each of the switch fabrics that are correctly operating , see column 2, lines 19-29. (Claimed detecting a failure in one of the communication paths),

re-routing cells through the other switch fabric if a path fails in the first switch fabric without exceeding the capacity of the switch. See column 2, lines 66-67 and column 3, lines 1-7. (Examiner interpreted the re-routing of cells to the other switch fabric as being the claimed detecting a failure in one of the communication flow paths, and switching the flow path to another of the switching cores, whereupon flow paths that are unaffected by the failure remain in place and do not switch cores).

Regarding claim 13, with reference to figure 1 and 2, Jones discloses a packet based multi-service switch device (figure 1) comprising:

switch fabric 14a and 14b (claimed at least redundant switching cores),

a plurality of slot controllers, each slot controller having cell processors (20a, 20b, figure 2) and arbitration logic 25 for controlling traffic flows output from the switch fabrics and input to the switch fabrics, see column 4, lines 27-41; each slot controller

determine the availability of data paths to all other slot controllers through both switch fabrics and for selecting a data path through one or other of the switch fabrics (14a and 14b), see column 1, lines 61-67, and column 2, lines 1-7. (Examiner interpreted the slot controller having the control over traffic flow inputs and outputs via the switch fabrics as being the claimed plurality of ingress and egress communications traffic flow controllers, each of said flow controllers directing one or more threads of communications traffic over one or another of said redundant switching cores),

Each slot controller having means for sending to each slot controller "health check" data cell and means for receiving health data cells from other slot controllers and means for monitoring the return of health check cells, see column 2, lines 19-29, (claimed flow controllers monitoring communications flow paths traversing said ingress flow controller, one of said redundant switching cores and said egress flow controller),

identifying the availability of individual data paths through each of the switch fabrics that are correctly operating , see column 2, lines 19-29, and re-routing cells through the other switch fabric if a path fails in the first switch fabric without exceeding the capacity of the switch. See column 2, lines 66-67 and column 3, lines 1-7. (Examiner interpreted the re-routing of cells to the other switch fabric without exceeding the capacity of the switch, as being the claimed whereupon detection of a failure in a link corresponding to one of said communication flow paths produces switching of a respective one of said flow paths from said one switch core to said another switch core,

whereupon said flow paths that are unaffected by said link failure remain in place and do not switch cores).

Regarding claims 2 and 14, Jones discloses data cells transmitted from any one of slot controller can be switched by each switch fabric to any slot controller, see column 1, lines 59-67. (Claimed communication flows in opposite directions between same ingress and egress controllers need not traverse a same one of said switching cores).

Regarding claim 3 and 15, Jones discloses that each slot controller has health check means for generating special health check cells, see column 5, lines 24-31, and means for transmitting the special cells to each other slot controller, and means for receiving the special cells at each slot controller and monitoring means for monitoring replies to the special test requests. See column 2, lines 119-29. (Claimed monitoring flow paths is accomplished using link test cells generated from a link test generator in said ingress flow controller to a link test cell receiver in said egress flow controller as in claim 3, and claimed ingress flow controllers include a link test cell generator and egress flow controller includes a link test cell receiver, monitoring of flow paths being accomplished using link test cells generated from a link test generator in the ingress flow controller to a link test cell receiver in the egress flow controller as in claim 15).

Regarding claims 4 and 16, Jones discloses a memory (claimed filter table) in each slot controller (egress flow controller) in which the availability of data paths are stored so that each cell arriving at the slot controller from an external link can be routed within the switch according to the availability stored therein and to avoid flagged paths

as unavailable in the slot controller memory. (The unavailability can be due to a faulty path as seen above with reference to claims 1 and 13, see column 2, lines 19-29). (Claimed altering a filter table in said egress flow controller upon detection of a flow path failure to thereby utilize said flow path from said another switching core as in claim 4, and claimed a filter table in said egress flow controller alterable upon detection of a flow path failure to thereby prompt utilization of said flow path from said another switching core). (Alerting the memory upon detection of path failure is inherent to Jones, because that is required for the determination of the availability of path in the memory at the slot controller).

Regarding claim 5 and 17, Jones discloses a memory that stores the availability and unavailability of paths as indicated above with reference to claims 4 and 16. it is inherent to Jones that some processing mechanism is used to update the paths availability in the memory of each slot controller, because that is required for the memory to function.

Regarding claims 6 and 18, as shown above with reference to claims 2 and 14, Jones discloses that re-routing through the other switch fabric is carried out based on the path availability in the memory (within the slot controller), therefore, the slot controller need not be notified of the switching of the flow path to the other switch fabric. (Claimed ingress flow controller need not be notified of said switching of said flow path to said another switching core).

Regarding claims 7 and 19, as best understood, Jones discloses that the originating slot controller receives reply cells from all the other slot controllers through both switch fabrics, (claimed redundant switching cores need not operate in lock step).

Regarding claims 8 and 20, Jones discloses means within the multi-service switch for monitoring heath check cells, see column 2, lines 19-29.

Regarding claims 9 and 21, Jones discloses that a single good cycle (request/response cycle of health check cells) is good enough to make the path available again. See column 7, lines 21-26. (Claimed a flow path is considered to be restored upon receipt of test cells for a period of time).

Regarding claim 12 and 24, Jones with reference to figure 5 discloses "health check" data cells including hierarchical address having multiple fields pertaining to various type links, see column 5, lines 32-67.

Allowable Subject Matter

8. Claims 10 and 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Claims 11, 23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Manning et al, US (5,909,427); Araki, US (6,256,291); Simons et al, US (6,332,198); Cantwell et al, US (6,370,155); and Rao et al, US (6,850,531).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM
Examiner
Art Unit 2662
May 12, 2005

JOHN PEZZLO
PRIMARY EXAMINER